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ABSTRACT

Written in response to requests from local school districts in New York State, this document provides information about the middle grades (grades 5, 6, 7, 8, and 9) and the changing nature of students in these grades. The first section reports results of studies on this difficult developmental period that were conducted by three New York school districts and by other researchers. Research on the effects on middle-grade adolescents of grade organization, homogeneity of pupil population, and organizational climate is summarized in a table. The second section reports the conclusions, recommendations, and observations of two school districts regarding the best way to educate young adolescents. Recommendations are also reported from other research studies. Final remarks in this section concern ways to evaluate individual learning styles and use this information to improve individual performance. Finally, schools and educators are urged to keep abreast of current research on the nature of adolescents and to use the results of recent studies to assure that each adolescent receives the best education possible. An annotated bibliography of 29 items on the middle-grade student is appended. (CB)

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Resource Monograph on Middle-Grade Students

The University of the State of New York
THE STATE EDUCATION DEPARTMENT
Albany, New York 12234
1984

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RESOURCE MONOGRAPH

ON THE

MIDDLE-GRADE STUDENT

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FOREWORD

In response to requests from local school districts, the New York State Education Department prepared in 1983 a Resource Monograph on Grade-Level Reorganization. The Monograph was intended to serve as a reference for school districts considering a grade-level reorganization.

Districts that used the Resource Monograph on Grade-Level Reorganization found the publication helpful but requested more information specifically focusing on the middle grades - grades 5, 6, 7, 8, 9 - and the changing nature of the students in those grades.

The Resource Monograph on the Middle-Grade Student is intended to provide school districts with additional information about the middle grades and the students in those grades and to serve as a complement to the Resource Monograph on Grade-Level Reorganization.

Grateful appreciation is given to David A. Payton, Special Assistant in the Office of General Education, for gathering the information and writing the Resource Monograph on the Middle-Grade Student.

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INTRODUCTION

In the fall of 1982, public school enrollment in the middle grades in New York State schools exceeded one million students, with the specific number of pupils in each of the middle grades being:

Grade 5: 181,065 pupils
Grade 6: 197,484 pupils
Grade 7: 230,445 pupils
Grade 8: 203,051 pupils
Grade 9: 239,904 pupils

These one million plus students are at a critical point in their lives. First, they are in the midst of an environmental and educational change reflecting the transition from elementary school (generally, a self-contained class and single classroom teacher) to secondary school (generally departmentalized where contact is with subject area teachers in addition to a homeroom teacher). Second, each is undergoing many personal, emotional, mental, psychological, social, and physical changes which, at times, are not well understood by the individual, the person's peers, and the adults with whom the individual interacts.

Often, the response of the schools to the changing needs of students in the middle grades is to reorder the grade-level configuration in which the students are placed. Figure 1 indicates the variety of grade-level organizations within school buildings in New York State that contain the middle-grade students.

Unfortunately, most studies indicate that:

> ....grade organization has little, if any, effect on the academic achievement or attitudes of the students enrolled in particular grade arrangements. Many specialists in this field agreed that grade organization exerted a limited influence on the course of a student's education. What was far more important was the quality of the program. (Educational Research Services, Inc., 1983)

Educators need to look not at the grade-level organization but at a comprehensive instructional/pupil support program, its content, its organization and its delivery in light of the changing needs of the middle-grade adolescent.

FIGURE 1

School Buildings in New York State Which Contain One or More of the Following Grade Levels: 5, 6, 7, 8, 9 (as of 1981-1982)

Grades Within The School	Number of Such Schools
9 only	3
9, 10	2
9, 10, 11	2
9, 10, 11, 12	398
8 only	1
8, 9	8
8, 9, 10	1
8, 9, 10, 11, 12	17
7 only	3
7, 8	120
7, 8, 9	211
7, 8, 9, 10	2
7, 8, 9, 10, 11, 12	227
6 only	4
6, 7	3
6, 7, 8	162
6, 7, 8, 9	34
6, 7, 8, 9, 10, 11, 12	16
5, 7, 8	1
5, 6	16
5, 6, 7	4
5, 6, 7, 8	59
5, 6, 7, 8, 9,	2
5, 6, 7, 8, 9, 10, 11, 12	6
4, 5	6
4, 5, 6	46
4, 5, 6, 7	2
4, 5, 6, 7, 8	7
3, 4, 5,	9
3, 4, 5, 6	21

Grades Within the School	Number of Such Schools
3, 4, 5, 6, 7, 8	14
3-12	1
2, 3, 4, 5	1
2, 3, 4, 5, 6	7
2, 3, 4, 5, 6, 7, 8	1
1, 4, 5, 6	1
1, 2, 3, 5, 6	1
1, 2, 3, 4, 5	10
1, 2, 3, 4, 5, 6	26
1-8	2
1-9	1
K, 5, 6, 7, 8	1
K, 5-12	1
K, 4, 5, 6	2
K, 3, 4, 5	1
K, 3, 4, 5, 6	5
K, 2, 3, 4, 5, 6, 7, 8	1
K, 1, 4, 5, 6	1
K, 1, 3, 4, 5	1
K, 1, 2, 5, 6	1
K, 1, 2, 4, 5, 6	2
K-5	442
K-6	1,442
K-6, 12	1
K-6, 11	2
K-6, 8-12	1
K-7	30
K-8	69
K-9	2
K-12	99

THE MIDDLE-GRADE STUDENT

Children, between the ages of 10 and approximately 13. go through a developmental and difficult growth period that sets them apart from all other age groups. They experience the most dramatic growth period, excluding infancy. in the development of the human organism. Joan Lipsitz (1984) described early adolescence as follows:

> Biologically, early adolescence is marked by a characteristic growth spurt, the appearance of secondary sex characteristics, and the onset of puberty. The rate of growth during early adolescence is second only to that of infancy. From then on, there is no time of life that rivals early adolescence for rapidity of growth--or for self-consciousness about it. Records indicate that the onset of puberty has occurred four months earlier every decade since 1840. Even if. as it now appears, this trend has stopped and the age of menarche (first menstrual period) remains approximately twelve and a half. young adolescents are biologically more than four years older than adolescents in the mid-nineteenth century, for whom the average age of menarche was seventeen. Biologically, today's young adolescents are approximately two years in advance of the young people for whom the first junior high schools in America were established. They are capable of reproduction at what to many adults seems a shockingly early age. Socially, however, we consider them younger than their grandparents and give them fewer outlets for responsible social behavior. Yet the early onset of puberty imposes responsibility for their sexual behavior at a much younger age than was required of their grandparents. They are at once socially younger and biologically older.
>
> This paradox creates one of the central tensions in schools for young adolescents. Schools are called upon to establish programs for students at different levels of social and physical development in communities that accept neither their social competence nor their physical precocity.
>
> In conjunction but not necessarily in synchrony with physical changes, significant psychological changes are occurring. The psychosocial tasks of adolescence include forming a conscious sense of individual uniqueness and solidarity with group ideals. The resolution of these tasks is determined in large measure by what precedes adolescence and will determine much of what follows. The events of adolescence are part of a continuum, not isolated phenomena. The challenge to schools is to work with people in an age group who have in many ways been isolated from the rest of the age span and to work with them at a time when they seek to extend their personal autonomy from adults and simultaneously to identify with them.

Several school districts have studied the problems of the middle-grade student and have addressed those problems in various ways. Following are materials and information from selected school districts in New York State that have conducted extensive studies of the adolescent student.

Jamesville-DeWitt Central School District The Jamesville-Dewitt Central School District (1980), in reviewing the literature on the subject of the middle-grade child, identified several characteristics of typical adolescents and grouped the information into four areas: intellectual development, physical development, psychological development and social development.

Those characteristics related to intellectual development include:

- Children at this age are moving from their dependence upon dealing with concrete information toward an ability to deal with abstract information; they begin to reason
- Individual intellectual differences of children at this age are considerably greater than those of younger children
- Children at this age learn more, earlier, than was true 25 years ago
- Recent research indicates that children at this age (10 to 12) experience a measurable period of tremendous brain growth
- Children at this age begin to develop strong, personal opinions about school in particular and education in general
- Children at this age have widely varying and rapidly changing intellectual developmental needs

Physical development characteristics of the middle-grade child are:

- Individual physiological differences of children at this age are considerably greater than those of younger or older children
- Children at this age enter puberty; the average age of entrance into puberty is younger than it was 25 years ago
- Children at this age experience dramatic spurts in their physical development, although the organs, bones, and muscles do not grow at the same rate and time
- Relative freedom from illness is typical of children at this age, but dietary and sleeping habits tend to be poor
- Children at this age are heavier and taller than their counterparts 25 years ago

The psychological development aspects of a typical adolescent include:

- Children at this age experience widely varying moods and display erratic and inconsistent behavior
- Children at this age begin to develop their own aspirations
- Children at this age want to be "adult" without losing the safety of childhood

- o The emotional patterns of children at this age are becoming established
- o Children at this age tend to be self-conscious and easily embarrassed
- o Children at this age are stuggling to form constructive self-images
- o The dramatic changes of puberty dominate the thoughts of children at this age

Some social development aspects of a middle-grade student are:

- o Heterosexual interest develops in children at this age
- o Children at this age increasingly seek approval from their peers, decreasingly from adults
- o Children at this age tend increasingly to resent adult restrictions
- o Differences in social development are considerably greater in children at this age than in children younger or older
- o Children at this age tend to model their behavior on that of older students
- o Children at this age experiment with language and other social behaviors they have never tried before and will not try again
- o The dramatic changes of puberty dominate the social interactions of children of this age
- o While children of this age are struggling to become independent, they tend to become lost without the security of family, peers, and school

Middle-grade students bring to school a wide range of physical, social, and emotional maturity levels as well as a broad spectrum of family backgrounds, socioeconomic settings, and personal experiences. General characterizations of the adolescent emphasize a heightened awareness of self, body, ideals, and relationships with others, and an apparent craving for independence which often masks a longing for security. Some specific characteristics found in a young adolescent are:

- o unaccounted forms of self-assertion, curiosity and sociability
- o restive, investigative, talkative
- o inquisitive about adults, observing them with interest
- o peaks of emotional intensity and variable moods
- o developing emotional patterns
- o beginning of physiological reorganization.

These are all new and important concerns of individuals in transition who seek to match new problems and challenges with fresh solutions.

These adolescents are proceeding through a developmental stage in which there is a wide range of ages at which maturation is reached. Puberty may be reached before the youngster arrives at junior high school, especially in the case of girls who usually reach it between the ages of 10 and 14. Boys can be expected to reach puberty between the ages of 12 and 16.

Rapidly changing external and internal signs of pubescence may cause unpredictable emotional reactions combining:

- Interest and rejection
- Pride and embarrassment
- Curiosity and shame
- Power and helplessness

Also, the social success of early-maturing girls and the athletic success of early-maturing boys can create anxieties, in terms of self-image, among their peers who mature later.

Growth spurts on the part of both girls and boys are customary during adolescence. Girls develop mature body lines; boys grow in height. In addition to necessitating adjustments to the physical changes, these growth spurts raise doubts in the minds of adolescents:

"Is this new body better than the old one?"
"Is it worth the trouble?"
"I wonder how I really look."

The awkwardness which frequently accompanies rapid physical changes may result in exhibitionism or withdrawal. The need to release energy may result in sudden and apparently meaningless outbursts of activity which are not always regarded as socially acceptable by peer or authority groups.

Although social maturity lags behind mental and physical maturity during adolescence, social development is crucial in the formation of a self-concept. An adolescent's peer group is another vital contributor to the notion of self, since during adolescence children gradually move from family orientation to peer orientation, thereby aiding the shift from family dependence and the development of broader social contacts and responsibilities. (New York State Education Department, 1983)

* * * * *

Mineola Union Free School District The Mineola Union Free School District (1980), in its assessment of middle-grade youngsters, identified the following characteristics of the student in this transition period:

- resentment of authority figures
- ambivalence concerning dependence
- transfer of recognition from adults to peers
- emancipation from the house
- fluctuation of emotions

- o development of changing values
- o concern about physical growth
- o development of self concept
- o social and sexual maturation
- o beginning intellectual maturation

One problem, however, is that this period of development is highly uneven among, between and within individuals. Rapid changes, including physical growth spurts and increased hormone changes, can produce markedly different responses in individual student behavior patterns. This is one reason why teachers of children of this age need special training to help students during this period of rapid change.

* * * * *

Herricks Union Free School District The Herricks Union Free School District (1978), as it studied the question of the middle-grades child, found that:

> Students of the middle school/junior high school age are going through a period of great change. Among youngsters at this stage of life, there is significant diversity in rates of growth and maturity, but at their own individual rates, most students between 10 and 14 are undergoing the following changes:
>
> - o Growth in independence - At this age students are becoming less reliant on adult opinion and less willing to accept the strict supervision and guidance of adults.
> - o Growth in importance of the peer group - As the importance of adult direction decreases, the peer group becomes more important for the adolescent. Students tend to form cohesive groups and adhere to the norms of such groups.
> - o Sexual and social maturation - Profound physical changes occur during this period of life. Students mature sexually and must learn social roles that reflect their new, often confusing, and stress-producing maturity.
> - o Intellectual maturation - Students are widening their intellectual horizons in terms of both knowledge and ability. They can deal with abstract concepts as well as concrete examples. Having developed basic skills in the elementary years, they are more independent in choosing and pursuing particular academic interests.
> - o Development of values and norms - The conventional wisdom is often questioned as youngsters search for meaningful values and often clash with the adult authorities they so willingly accepted a few years before.
>
> These major physical, intellectual, emotional, and social changes do not always occur easily or smoothly. Early adolescence has traditionally been a time of difficulty. For this reason, it has been suggested that students of this age range be educated in an environment that eases the transition from childhood to full adolescence and that protects them from the pressure and

success orientation that characterize some American institutions of secondary education.

* * * * *

Other Studies Thornburg (1981) identified several developmental and learning characteristics of middle-grade adolescents. Among the more important developmental characteristics are:

1) Developing Friendships with Others - Children aged 8 and 9 typically have little need for social interaction. This changes between 10 and 12 when they begin to develop peer groups and initiate friendships among members of the same sex. The research is not definite on when and under what conditions middle grade youngsters move from same sex to opposite sex friendships. Data indicate that the trend is for the change to occur at age 12-13 (rather than age 14-15 a decade ago).

2) Becoming Aware of Increased Physical Changes - Adolescent physical maturity has moved to the pre-teen years with girls beginning a growth spurt at 10 and boys at 11 or a little later.

3) Developing Ability to Organize Knowledge and Concepts With Problem Solving Strategies - The middle-grade student falls within Piaget's concrete and formal operation strategies. The concrete stage is conceptual involving the organization of information around categories or concepts which are generalizable. The formal stage is characterized not only by abstract thought but also by the use of logic and reasoning in making decisions.

4) Interest in Planning Many of Their Own Learning Experiences - Adolescents have inquiring minds which cause them to go beyond many ideas presented in class and into many personal areas.

5) Emerging Value System - Until about age 8, a child's primary value source is the parent. In pre and early adolescence, peers become the predominant influence. The middle-grade students begin to question and challenge many of the moral and value teachings of parents, teachers and other adults.

The Association for Supervision and Curriculum Development in 1975 prepared a report on "The Middle School We Need." This report contained a detailed description of the characteristics of the emergent adolescent learner. The characteristics were grouped into three categories:

- Physical Growth Characteristics
- Mental and Intellectual Growth Characteristics
- Personality Development Characteristics

Among the physical growth characteristics identified were:

- Increase in height, body breadth and depth, heart size, lung capacity, and muscular strength with girls begin the growth spurt between ages 8-12 and boys between the ages of 9 to 13

- o Uneven bone-muscle development causing lack of coordination and poor body mechanics

- o Extreme restlessness and a need to have a daily physical release

- o Self consciousness about awkwardness and difficulty accepting physical body changes, particularly if they are in any way different from the "ideal" or "average" or, especially, if there is a slowness in development

The report also identified various mental and intellectual growth characteristics unique to the emerging adolescent:

- o Mental growth concurrent with physical maturation, students at these ages begin to develop the ability to carry out formal and concrete intellectual operations

- o A high degree of intellectual curiosity

- o A preference for active involvement with few intellectual inhibitions

- o A better understanding of their individual abilities, a strong striving for approval and easy discouragement if they do not achieve

The personality development characteristics of the emergent adolescent are:

- o Development of self-image and self-concept with a concommitant conflict between dependence and independence in the family structure; conformity high with peer acceptance a dominant concern

- o A sex-role identification whereby the adolescent learns to feel, think, and act in a role congruent with his or her sex

- o A great concern for peer acceptance; social acceptance crucial and peer pressure at its peak during early adolescence

- o A fluctuating emotional behavior that varies from amiable and content to aggressive, belligerent and argumentative. Other adjectives that can be applied to adolescents depending upon the situation are: cheerful, affectionate, timid, worried, hurt, sad, jealous, competitive

Probably the most extensive examination of the characteristics of students in the middle grades was recently completed by the Educational Research Service (ERS) in 1983 and published in a research brief entitled: "Organization of the Middle Grades: A Summary of Research." Among the unique characteristics of the "inbetweens," "early adolescents," "transescents," or "middlescents" are:

1. Desire for independence

2. Growth in importance of the peer group

3. Sexual, emotional, social, intellectual maturation

4. Search for values and norms

Recent research (Mullen and Chaffee, 1983) into the growth of the brain has added further information about the development of the adolescent student. The brain does not grow in a linear fashion but grows with alternating spurts and rest periods. Studies done by more recent researchers, particularly Herman T. Epstein (1981). suggest that youngsters experience alternating spurts of brain development followed by plateaus during which brain growth slows. This is in contrast to Piaget's belief that children develop in a smooth, gradual and evolutionary manner. Epstein discovered in most children six month periods of rapid brain growth followed by three years of slower growth. Growth spurts generally occur between the ages of 2-4, 6-8, 10-12, and 14-16. During a growth spurt children find it easier to acquire new, higher-level cognitive abilities, picking up novel concepts and methods quickly and having less difficuity retaining them. Growth spurts correspond to grades one, two, five, six, nine and ten.

Between growth spurts, the brain enters a plateau period where the brain adjusts itself to its new size and complexity. Plateaus occur during the ages of 4-6, 8-10, and 12-14 which correspond to grades three, four, seven and eight. It seems to be almost impossible for most youngsters who are experiencing a plateau period to initiate and develop new and higher-level cognitive thinking skills.

By the age of seven or eight a child enters what Piaget called a "concrete operations" stage where consciousness of self interacting with the outside world first appear. This is followed by a "formal operations" period in the pre-teens and early adolescence years. That encompasses a capacity to reason hypothetically.

Further, Epstein discovered that girls generally undergo rapid brain growth earlier than boys - until the 14-16 year old period when the situation reverses. This means that most girls are intellectually more prepared for certain kinds of learning before most boys at key age levels - the early school years, and particularly in the age 10-12 range - about sixth or seventh grade. As girls begin puberty, their brain growth is three times that of boys the same age.

Other researchers, in examining the emerging adolescent, have conducted studies on such topics as: effect of grade organization on students, homogeneity of the pupil population, grade organization and academic achievement, and organizational climate and grade arrangements. Summary Table A, taken from the publication "Organization of the Middle Grades: A Summary of Research" capsulizes the most relevant and current research in these areas including the author of the study, the year the study was done, the purpose of the study, the sample used for the study, and lastly, the findings of the study.

SUMMARY TABLE A

AUTHOR AND YEAR	PURPOSE	SAMPLE	FINDINGS
Simmons and Others [1973]	To analyze the self-image of early adolescents as they underwent the transformations of puberty.	Administered various psychological tests to a random sample of 2,625 students in grades six through 12.	Early adolescents were distinctly more self-conscious than children in other age groups; held a more "unstable" and "shaky" picture of themselves; experienced a slight decline in global self-esteem; showed less positive attitude toward several specific characteristics previously valued highly; and believed that parents, teachers, and peers of the same sex viewed them less favorably than before [358:553, 555, 558-9].
Evans [1969 & 1973]	To measure the anxiety students experienced as a function of the grade organization of the schools they attended.	Compared three school organizations, 8-4, 6-3-3, and 5-3-4, by studying 2,730 students in grades six through 12.	Found "no meaningful relationship between pattern of grade organization and the anxieties manifested within students" [131:466-8; 130:8-9, 88].
Stark [1966]	To determine the effect of grade organization on student attitudes.	Compared the attitudes of five males and five females each from 7th grade in 10 8-4 schools, nine 6-6 schools, 12 6-3-3 schools, and 13 5-3-4 schools.	Found no significant differences in the responses of the students to the *California Test of Personality*, which led to the conclusion that "organizational structure has little effect upon the overall personal-social adjustment of 7th grade pupils" [374:75-6, 105, 102].
Garner [1962]	To determine which type of grade organization had the greatest effect on students' abilities to adjust to problems.	Tested 10 male and 10 female 8th graders each from schools organized 7-9, 7-8, and 7-12.	The lowest number of student adjustment problems occurred in 7-9 schools, the highest number in 7-8 schools. Garner concluded that "schools organized on the 6-3-3 plan were providing more of the desirable features of the junior high school than were the schools organized on the 6-2-4 and 6-6 plans" [149:4, 70-1, 130-1].

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SOURCE: Educational Research Service, ORGANIZATION OF THE MIDDLE GRADES: A SUMMARY OF RESEARCH (Arlington, VA.: Educational Research Service, 1983), p. 35. Used with permission.

SUMMARY TABLE A (continued)

AUTHOR AND YEAR	PURPOSE	SAMPLE	FINDINGS
Myers [1969]	To study the effect of articulation from 6th grade to 7th grade on student social relationships.	Administered socio-metric instrument to 350 6th graders in an elementary school and repeated the test when the students were 7th graders.	Found a significant decrease in "mutuality"--old friendships dissolved and the students made new friends. Concluded that the study gave indirect support for a 6-8 middle school because of the more gradual transition from self-contained classrooms to departmentalized organization [304:84-7].
Hillyer [1972]	To determine differences in the levels of intellectual, interest, emotional, and social maturity of 4th, 5th, 6th, and 7th grade pupils attending elementary schools or middle schools.	Administered variety of achievement tests and attitudinal measurement scales to 25 male and 25 female students each from 4th, 5th, 6th, and 7th grades in five middle schools and five elementary schools.	Concluded that 4th, 5th, 6th, and 7th grade pupils had "distinguishable maturity differences" that allowed grouping of pupils by maturity levels; 5th, 6th, and 7th grades should be included in a middle school; middle schools were better than elementary schools [206:5, 38-42, 82-3, 102; 349:95-6].
Dacus [1963]	To determine maturity levels of students in various grades in order to make recommendations concerning appropriate grade organizations.	Tested 330 students in grades five through 10 by administering the *California Test of Personality* and a sociometric device to determine opposite sex choice.	For the sample population as a whole, Dacus found no significant differences in social maturity in any grade combination. He recommended a grade combination of 6th and 7th grades over 5th and 6th grades for the lower division and 9th and 10th grades over 8th and 9th grades in the upper level [99:1, 5-8, 119-21].
Sanders [1966]	To compare the performance of middle school students to junior high school students to determine which grade grouping was the most homogenous in terms of mental ability and educational development.	Examined the responses of a national sample of students used by the publishers of eight achievement tests to establish national norms. The data contained the responses of more than 1,000 students each from grades six through nine.	The results of his analysis indicated a "slightly greater homogeneity in the grade combinations 6-7-8 rather than 7-8-9." The difference, however, was not "educationally significant" [342:139-89, 254, 258-9].

SOURCE: Educational Research Service, ORGANIZATION OF THE MIDDLE GRADES: A SUMMARY OF RESEARCH (Arlington, VA.: Educational Research Service, 1983), p. 35. Used with permission.

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SUMMARY TABLE A (continued)

AUTHOR AND YEAR	PURPOSE	SAMPLE	FINDINGS
Stout [1962]	To investigate the differences separating junior high schools that produced high student achievement and those that produced low student achievement.	Identified 22 high achieving schools and 21 low achieving schools. Visited each of these schools for observation and administration of the *Minnesota Teacher Attitude Inventory*, as well as interviews with each principal. The grade organization of the schools was mixed, with some schools organized as grades seven through nine and some organized as seven through -12.	A higher proportion of the 7th through 9th grade junior high schools were in the high achieving school group. Stout observed that "for schools in this study, the chances of students achieving above potential were better in a 3-3 organization than in a six-year organization." Nevertheless, he concluded that grade organization "did not discriminate between the two groups of schools." The differences in the schools resulted from staff performance and school climate [379:6, 56-63, 74, 204, 208].
White [1964 and 1967]	To examine the effect of grade organization on academic achievement and personal-social development.	Sample consisted of 35 students in kindergarten through 9th grade schools, 35 in three-year junior high schools, 35 in six-year junior high-senior high schools, 35 in a 7th grade school, and 35 in a two-year 7th-8th grade school. Administered achievement tests and attitudinal measurement scales.	Based on the findings, White ranked the one-year school as the highest overall, followed by the two-year school, the K-9 school, the six-year school, and the three-year school. He also found that schools with one or two grades did significantly better on average than schools composed of three or more grades [413:2, 43, 65-66, 69, 72-76, 82, 134-5, 141]. In another analysis of these results, White recommended that seventh graders be kept as separate as possible from pupils in higher grades and that educational and social programs be developed especially for students in each grade level and not for the school as a whole [414:7-9].

SOURCE: Educational Research Service, ORGANIZATION OF THE MIDDLE GRADES: A SUMMARY OF RESEARCH (Arlington, VA.: Educational Research Service, 1983), p. 32. Used with permission.

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SUMMARY TABLE A (continued)

AUTHOR AND YEAR	PURPOSE	SAMPLE	FINDINGS
Wolfe [1972]	To study differences in the organizational climate of junior high schools, middle schools, and 7th-8th grade intermediate schools.	Administered *Organizational Climate Description Questionnaire* to teachers and principals in 10 middle schools, 10 intermediate schools, and 10 junior high schools.	The findings indicated that grade organization had no significant effect on organizational climate. In addition, the behavior of the teachers did not vary significantly between the three types of schools, nor was the behavior of the principals significantly influenced by grade organization [419:87, 89-91].
Gruhn [1967]	To determine attitude of principals toward middle grade organization.	Sent questionnaires to state departments of education and to schools with distinctive administrative organizations of either grades 6-7-8, 7-8, or 7-8-9. The respondents numbered 3,368.	Eighty percent of the respondents believed that a 7-8-9 grade arrangement was the best grade organization for the students. Seventy-one percent believed that a 7-8-9 organization was the best age grouping of the pupils. Gruhn concluded that the junior high school had more support from principals and state departments of education than the other grade organizations [187:169, 171-2, 174].
Valentine and Others [1981]	To determine attitude of principals toward grade organization.	Surveyed 1,413 principals and compared their responses to those on a 1966 survey.	Fifty-four percent of the 1980 respondents favored a 6-7-8 grade organization, compared to 65 percent of the 1966 survey who favored a 7-8-9 grade organization [400:88-90].
Tompkins and Roe [1957]	To determine attitude of principals toward two-grade organization.	Distributed survey to 374 principals in schools consisting of only 7th and 8th grades.	A majority of the respondents (64.2 percent) preferred a three-year junior high school; less than a third (32.9 percent) preferred a two-year grade organization [392:40-42].
Moss and Others [1979]	To survey principals to determine their attitude toward placement of 5th grade.	Surveyed principals of 41 schools in New York.	Most of the principals (33) segregated 5th and 6th graders from the other grades in the school. Moss concluded that 5th graders do not belong in a middle school [302:30-31].

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SOURCE: Educational Research Service, ORGANIZATION OF THE MIDDLE GRADES: A SUMMARY OF RESEARCH (Arlington, VA.: Educational

EDUCATING THE MIDDLE-GRADE STUDENT

Lipsitz (1984) contends that:

> It is the avowed purpose of schools to enhance the power of students' intellect. There is considerable controversy about the quality of those powers during early adolescence. Piagetians hold that during adolescence, if at all, a qualitative shift occurs in cognition that enables human beings to reason abstractly. This development, the shift from concrete to formal operations, makes possible propositional thinking, considering ideas contrary to fact, reasoning with hypotheses involving multiple variables, appreciating the elegance of a mathematical theorem, the subtlety of a poetic metaphor, the power of political ideology. It makes possible projecting oneself into the future and thereby accepting the necessity of preventive behavior. It allows the examination of values accepted without question during childhood. It makes personally accessible such concepts as "the greater good," "the social fabric," the ends justify the means," civil disobedience," "give me liberty or give me death," $E=Mc^2$," "to be or not to be," and "the cradle of civilizations."
>
> Not all researchers agree about whether cognitive development is characterized by quantitative growth only or in addition by qualitative shifts.

As school districts and researchers examined the unique situation of middle-grade students, they began to identify how schools might best address their special needs. Following are some conclusions, recommendations and observations made by several school districts and researchers in response to the needs of the middle-grade student.

Niskayuna Central School District In reviewing what practices and procedures would best meet the needs of the middle-grade student and address the educational concerns of this age group, the Niskayuna Central School District (1981) found:

> There is general agreement in the literature and among practitioners that these practices and procedures should include the following essential elements for educating middle school age students (Wiles and Bondi, 1980):
>
> 1. A self contained organizational unit with its own faculty, administration and building
>
> 2. Teaching staff specially trained to work with pre and early adolescent learners
>
> 3. A program that is structured around the developmental needs of students - a program that takes into consideration the physical, social, emotional and intellectual growth changes taking place and can accommodate a wide range of differences in its students

4. A balanced program centering on basic skills for continued learning, a strong personal development program, and a content or knowledge base

5. Interdisciplinary teams of teachers who have common planning time and teach common groups of students

6. Programs that are closely articulated with the elementary and high school with skill continuums, instructional management systems and sequenced curriculums

The lack of conclusiveness in the research literature provides a dilemma for educational planners confronted with shifting enrollment patterns which cause pressure to change grade structures. The best guidance found in the literature in the face of this dilemma is the following (Trump and Vars, 1976):

> To date, neither logic nor research gives unequivocal support for any particular clustering of ages or grade levels during the intermediate years. In most school districts, these matters are determined primarily by the capacity of available school buildings and current trends in enrollment, rather than commitment to a particular form of intermediate school organization. This situation suggests that educators might well cease the grade grouping arguments and get on with the task of providing learning experiences appropriate for whatever age, grade, or maturity levels happen to be housed in a particular unit.
>
> The intermediate level program requires that the curriculum, staff, and school environment be especially suited to young people going through "transescence" to use a term coined by Eichhorn to connote the transitional years that surround puberty.
>
> Theoretically, these provisions could be made in elementary, middle, or senior high schools. As a matter of fact, each of these types of institutions is likely to have a different atmosphere and identity, which in turn influence the educational program. For example, circumstances may make it difficult for a seventh grade teacher to meet his young students' needs if he is teaching in a junior-senior high school, where status is accorded the senior high school athlete, scholar, or student leader. If, on the other hand, that seventh grade teachers seeks to serve transescents in an elementary school, one designed primarily for children, he may find himself limited by schedule, facilities, lack of staff specialists such as guidance counselors, and a program emphasis on teaching the basic skills. Inevitably and inexorably, the "label" of a school, its public image, and its major clientele influence, both overtly and unconsciously, the general nature of the program. Thus a case can be made for a separate institution for transescents, although its most desirable boundaries cannot be set with certainty.
>
> One possible solution is to have coinciding school environments, as suggested years ago by Anderson. He proposed overlapping non-grading institutions embracing the equivalents of grades K-7, 6-10, and 8-12. Transfer from an elementary to an intermediate or

middle school could take place at any time over a two-year period and would depend upon the individual's academic progress, physical maturity, and socio-psychological status. Similar considerations would determine when the student was ready to move into a high school type of learning environment. Under such an arrangement, there would be no hard or fast boundaries between elementary and middle or between middle and high school education, but rather a truly articulated educational program.

Although overlapping grade levels may be supported on a theoretical level, few places have attempted it because of the variety of practical administrative problems there would be with such a grade arrangement.

* * * * *

Spencerport Central School District The Spencerport Central School District (1981) conducted a study which examined various grade-level configerations as well as the needs of adolescents and concluded:

> What young adolescents need ...is a variety of experiences with people, things, nature, and problems, opportunities to explore ideas; a chance to expand their basic skills of expression and computation - all that plus teachers concerned with helping young minds and bodies develop toward excellence rather than transmitting subject matter and rating youngsters on their academic or athletic powers.

* * * * *

Other Studies Thornburg (1981) posed the following suggestions on dealing with the middle-grade student:

1. Learning must be functional to the student. The material and learning must be relevant.

2. Teachers must not actively compete with student's friends or with powerful external influences such as the media. A student's friends are all-important. "The professional role of the teacher can promote reciprocal respect which should not be violated by teachers over-identifying with students." The average middle school student spends six hours a day watching television.

3. Learning must include understanding social contact and responsibility. Teachers need to know and understand the importance of friends to the middle grade student. Students, also, need to learn how to make friends and get along with others. Companionship by young adolescents should not be reviewed as a threat to classroom order or management but as a natural development in the lives of middle-grade students.

4. Teachers must present educationally and environmentally relevant issues. Teachers generally fail to take a contemporary stance when ascertaining the needs of early adolescents; in addition, most curricula are outdated. Learning must be extended into the students' natural environment.

Toepfer (1974), in exploring the problems confronting districts that are seriously concerned with the education of middle-grade students, says:

As school districts continue to reorganize middle school programs, they must avoid the pitfall of merely offering "old wine in new bottles." This dilemma can best be averted by developing systematic curriculum planning projects which: (a) involve staff and community in defining new objectives and directions for the middle grades; and (b) encourage the professional staff to develop new programs, write new curricula, and develop the instructional skills necessary to improve learning for students in the reorganized middle schools.

The fact that such effective change will take time, effort, and adequate fiscal underwriting must be squarely faced if improved programs for middle-grade students are to be achieved.

Toepfer further notes that:

The most effective redefinition of programs for emerging adolescents in the middle-grades can be found in those districts where such efforts have been characterized by the earmarks of sound curriculum planning.

The guidelines for sound curriculum planning identified and articulated by Toepfer are:

1. Curriculum improvement in the middle grades of a school district must be undertaken only after a careful identification of how proposed changes will affect elementary and high school programs. Such changes in the middle school must be thought of as macrocosmic rather than microscosmic since they will have critical impact on the articulation of the local kindergarten through twelfth grade curriculum program.

2. The objectives of projected changes in middle grades programs, as well as means to assess their projected improvements, should be carefully specified before launching the innovations. it is important that such means be able to measure both areas of success as well as needs for continuing improvement before the middle school innovation is inaugurated.

3. Objectives of proposed changes in middle grades should be stated in terms of characteristics of the emerging adolescent population as defined in the local school-community setting. This process of local identification is a necessary step for planning means to improve instruction in the middle grades.

4. The proposed innovation in the middle grades must then be related to a curricular rationale to identify how it will achieve its purpose in terms of the three aforementioned guidelines.

The Association for Supervision and Curriculum Development, in 1975, identified various recommendations for the middle school and possible implications for middle school programs. These recommendations and implications, while specific in their application to a middle school, have general application to the needs of middle grade students. The information is grouped into these areas: Physical Growth Characteristics, Mental and Intellectual Growth Characteristics, Personality Development Characteristics.

The recommendations related to the physical growth characteristics of the adolescent child included in following. The middle school should provide:

1. A program adapted to the ever-changing physical needs of the middle school student.

2. Opportunities for interaction among students of differing age and physical development.

3. Instruction related to growth of the body.

4. Activities in physical education, sports, and student activities that are appropriate to levels of maturity.

5. Teachers who are aware of the developmental characteristics and tasks of transescence.

6. A program for identifying students' physical limitations.

7. A curriculum modified to avoid undue stress on transescents.

Possible implications for middle school programs of the unique physical growth characteristics of the adolescent student are:

1. Classroom experiences, orientation sessions, and discussion periods should be provided that will develop an understanding of physical growth and stress the normality of variability.

2. Guidance should be provided by teachers in the classroom on growth and development matters.

3. A carefully planned program of sex education should be offered.

4. Periodic physical examinations should be conducted.

5. Physical education classes and student activities should provide for individual differences.

6. The physical education program should develop both small and large muscle groups, and emphasize learning fundamentals of movement and building a foundation of physical fitness.

7. The physical education program should offer a wide variety of activities.

8. A variety of sports activities requiring skill and strength should be offered. All students should have an opportunity to participate in physical activities at levels of their physical abilities and skills in programs which do not over-emphasize interscholastic sport competition.

9. Where an interscholastic sports program exists, the number of games should be limited and most of them should be held in the afternoon, after school hours. An intramural program should receive higher priority and emphasis so that all interested students may be included.

10. The school should provide time for daily exercise, and/or a place where students can "be children" by playing and being noisy for short periods of time.

11. The school should guard against over-exertion by teaching the student to recognize his or her limits.

12. Equipment and facilities within the school plant should be planned and designed with the physical growth characteristics of transescents in mind.

13. Where appropriate, criteria of physical development should be employed in grouping middle school students for instructional purposes.

14. School health examinations should be given and health records kept.

The recommendations related to mental and intellectual growth characteristics of the middle-grade student follow. The middle school should provide:

1. Learning experiences for transescents at their own intellectual levels, relating to immediate rather than remote academic goals.

2. A wide variety of cognitive learning experiences to account for the full range of students who are at many different levels of concrete and formal operations.

3. A diversified curriculum of exploratory and/or fundamental activities.

4. Opportunities for the development of problem-solving skills, reflective-thinking processes, and awareness of the student's environment.

5. Cognitive learning experiences so structured that students can progress in an individualized manner.

6. A curriculum in which all areas are taught to identify opportunities for further study, to help students learn how to study, and to help them appraise their own interests and talents. In addition, the middle school should continue the developmental program of basic skills instruction, while encouraging personal curiosity, with one learning experience inspiring subsequent activities.

7. A planned sequence of concepts in the general education areas, major emphasis on the interests and skills for continued learning, a balanced program of exploratory experiences and other activities and services for personal development, and appropriate attention to the development of values.

8. A common program in which areas of learning are combined and integrated to break down artificial and irrelevant divisions of curriculum content.

9. Methods of instruction involving open and individually directed learning experiences. Traditional lecture-recitation methods should be minimized.

10. Student criteria which include not only cognitive, but also physical, social, and emotional considerations.

11. As much consideration for who the student is and becomes, as for how much and what he or she knows.

12. Experiences in the arts for all transescents.

13. Curriculum and teaching methods which reflect cultural, ethnic, and socioeconomic subgroups within the student population.

Possible implications for middle school programs as a result of the special mental and intellectual growth characteristics of the adolescent children are:

1. Individualized instruction should be provided so that the student can proceed successfully at his or her own pace and level of ability.

2. The school should make available learning activities which embrace a broad range of modes-reading, writing, listening, making and doing. Learning materials should represent a wide variety of media.

3. Students should be free to make activity choices and work at their own rates.

4. Provision should be made in the classroom for many opportunities for varied activity-oriented and short-term learning experiences.

5. Where appropriate, previously departmentalized facets of the curriculum should be combined and taught around integrative theme curriculum units.

6. The student's imaginative talent and need for self expression can be fulfilled in compositions and projects in music, art, and social studies.

7. Exploratory, enrichment programs built around students' hobbies and interests should be a part of the formal curriculum program of the middle school.

8. Aesthetic components of the curriculum should be considered basic ingredients of the school program and not be treated as "frills."

The recommendations for the middle school related to the personality development characteristics of the middle-grade student include:

1. A curriculum that deals with the social-emotional needs of the preadolescent learner with classroom instruction, counseling, and extra-class activities that take into account the unique needs of the transescent.

2. Arrangements for close, cooperative efforts among all the participants-learner, parent, and teacher.

3. Administrative arrangments to ensure that personality development has continuity both in breadth and in depth. Continuous, cooperative curriculum planning is essential among elementary, middle, and secondary school personnel.

4. Concrete approaches to learning as a needed foundation for more abstract thinking.

5. An approach in working with emerging adolescents that will have consistency with basic democratic principles.

Possible implications for middle school programs as a result of the personality development characteristics of the young adolescent are:

1. The middle school should provide a curriculum that is flexible in scope and sequence in order to meet the divergent needs of emerging adolescents.

2. A greater array of socializing experiences need to be provided for the transescent student

3. Middle school programs should provide experiences in sharing among students, in accepting responsibility, and in self-direction.

4. Continuous in-service education for school staff within the areas of learner personality development should be provided.

5. Teacher-pupil planning should be developed.

6. Strong school guidance-counseling services are needed to help emerging adolescents adjust socially to their environments.

7. Student grouping practices should be flexible.

8. Competitive sports should be de-emphasized with more attention directed toward programs of intramural sports where all levels of abilities are accepted.

9. To meet the personality development needs of learners in larger school populations, the school should: (a) reorganize total pupil enrollment into smaller groups perhaps through a "house plan"; (b) arrange greater contact with the same teacher over a longer period of time, especially for the new students in the middle school; and (c) assist the learner in adjusting to the transition process between elementary and middle, and secondary levels.

10. All school teachers should fill a counseling role for students.

* * * * *

Ability, Style, and Structure While ability grouping clearly is designed to respond to student learning differences, particularly how well students achieve academically, it does not address differences in how students learn best. Education researchers have found a surprisingly low relationship between learning styles and ability levels. Many high-ability students, for example, need a structured program if they are to achieve at their level of potential. And yet, many programs for high-ability or gifted students feature independent study.

Many educators are coming to recognize that efforts to compensate for differences in student learning abilities should not be confused with those needed to respond to differences in learning styles.

Now, there has developed in the field of education an interest and concern in something usually designated as "learning style" or "cognitive style." The common factor in the many different approaches to this construct seems to be an awareness that a student brings to learning many behaviors, aptitudes, skills, and attitudes that have tremendous consequences for that student's learning process. In addition, there seems to be a growing awareness that schools will continue to be ineffective and inhumane for many students unless these differences in "learning style" are made an intrinsic part of the total school curriculum. "Cognitive style" or "learning style" is a student's preferred way of learning.

Each student has his own cognitive style or way of seeking meaning or knowing. Various individuals have developed cognitive style mapping models. One of these individuals is Dr. Joseph Hill who writes in "The Educational Sciences":

> An individual's cognitive style is determined by the way he takes note of his total surroundings - how he seeks meaning, how he becomes informed. Is he a listener or a reader? Is he concerned only with his own viewpoint or is he influenced in decision-making by his family or associates? Does he reason as a mathematician, or as a social scientist, or as an automotive mechanic?
>
> These are but a few examples of the facets of human makeup that are included in a student's cognitive style. Family background, life experiences, and personal goals make each of us unique. Each map reflects each student's cognitive style. A cognitive map provides a picture of the diverse ways in which an individual acquires meaning. It identifies his cognitive strengths and weaknesses. This information can be used to build a personalized program of instruction.
>
> Cognitive maps are printed out in the form of a cartesian product of three sets. The first set indicates a student's tendency to use certain types of symbols, his ability to understand words and numbers, qualitative sensory symbols, qualitative programmatic symbols, and qualitative codes. The second set indicates influences which the student brings to bear in deriving meaning from symbols. These influences are affected mainly in terms of his individuality (I), or his associates' (A) perceptions, or those of his family (F). The third set indicates the manner in which he reasons, or the way in which he infers. Whether he thinks in categories (M), or in terms of differences (D), or synthesizes multiple relationships (R), or uses all three (L), his modality of inference influences, and is influenced by, symbols and the cultural determinants he employs in his style. These three sets of elements, i.e., symbolic mediation, cultural determinants, and modalities of inference, comprise the cognitive style of the individual. A maximum of 2,560 different profiles of these elements are possible for an individual to show in his map at a given level of educational development.

The Fredonia Central School District (no date) found there are basically four ways to get data for the learning style profile (LSP). One, empirical mapping (observation), by a person trained in the definitions of the elements, yields fairly reliable profiles, but is time consuming on a large scale. Two, laboratory testing, involves having the student manipulate and/or respond to a stimulus individually and then having their behavior scored by an observer. This approach gives excellent data if done properly but is also time-consuming. Three, paper and pencil

responses to inventories, standardized tests, etc. This can be done in large groups effectively, but requires fairly large amounts of time in scoring the results (unless computerized). And four, the self-report technique (Q-sort) which involves placing statement cards on a continuum from Almost Never to Almost Always.

Each approach to mapping the student's behavior has its advantages and disadvantages. Each can produce reliable data if done properly. There is no right or wrong way to derive the data, nor is there any standardized technique which can be used in all cases. The problem of getting good data involves selecting the most appropriate technique for the behavior being mapped while taking into consideration the age of the student and the limits of the environment.

Learning style profiles (LSP) have potential use in any aspect of the school environment. Without attempting to be inclusive, or to suggest that some are important, a list of possible uses for LSP data is given below.

1. Individual guidance
   LSP can be used to help students develop more insight, plan academic programs more effectively, and develop more realistic career plans.

2. Student-teacher matching
   If the teacher's style and the student's style are too dissonant, the student probably won't learn the material. By deliberately matching student and teacher on the basis of LSP, learning should be more effective and efficient.

3. Student-material matching
   If the student is given material that doesn't come close to the learning behaviors the student has available, the student won't be able to use the material effectively; for example, giving a book to a non-reader.

4. Guide for purchasing material
   If a teacher or administrator knows the characteristics of the learners they are responsible to, they can purchase the most appropriate material rather than getting the material that "looks good" or that "we've always used."

5. Student grouping
   Either in a classroom or larger unit, grouping students on the basis of LSP can be helpful. At the high school level, the social studies department has developed classes that use alternative instructional techniques. The students are given an opportunity to explore these alternatives during the ninth grade program, then they chose the class that seems to work best for them. Teachers are given <u>their</u> assignments by matching their LSP to that of the class.
   There are basically three alternatives in this program:
   a. Teacher-centered — the teacher is the focal point of the classroom utilizing lecture and A-V material as the basic tools for teaching.
   b. Student-centered — the students working in groups under the direction of the teacher is the approach. Among the specific techniques used are simulations, debates, and group research.
   c. Independent — here the student works by himself or with one or two others using material (books and AV) and a study guide provided by the teacher.

These are not the only ways to group students on the basis of LSP or necessarily the best ways. We developed this approach because we felt it would permit us to work more effectively within the constraints of a conventional high school organization.

6. Teacher Assignment

Although teachers and administrators seem to assume that any good teacher can work successfully with any student, research and experience does not support this assumption. A teacher is only good in relation to how effectively he/she communicates with the students. That effectiveness is governed as much by the characteristics of the students as it is by the skills, personality, and experience of the teacher. Therefore, consciously and deliberately assigning a teacher with a certain style to work with students having a similar style would seem to be an excellent strategy, all things being equal.

Where teams of teachers are being established, some consideration to matching and/or blending their styles needs to be included in the selection process. It makes little educational sense to assign a teacher to a team when that teacher's style is inappropriate to the objectives and style of the team.

Mullen and Chaffee (1983) synthesized the work and results of several noted researchers who have explored in depth the question of learning styles:

> David E. Hunt, a psychologist at the Ontario Institute for Studies in Education in Toronto, believes one of the most effective ways to consider different learning styles is in terms of how much structure a student needs to learn most effectively. On a three-stage scale, A-B-C, Hunt characterizes A students as those who require a great deal of structure--teacher explains material in detail, instruction given clearly with very specific requirements. C Students, on the other hand, are those who require little structure, organize their own material and require a minimum of teacher involvement.
>
> In testing students to determine their need for a structured or unstructured learning environment, Hunt and his colleagues found that more than half of all sixth graders require a high level of structure while the opposite was true of ninth graders--more than half of them learn better in a less structured classroom or school setting.
>
> Anthony F. Gregorc, associate professor of curriculum and instruction at the University of Connecticut at Storrs, has identified four learning patterns:
>
> - Concrete sequential, characterized by a propensity to derive information through direct, hands-on experience. Such learners appreciate order and logical sequence.
>
> - Concrete random, characterized by an experimental attitude and an ability to make intuitive leaps in exploring unstructured problem-solving experiences. Such learners use a trial-and-error approach in acquiring information.

- Abstract sequential learners have a wealth of conceptual images in their minds against which they match what they read, hear or see. They prefer a presentation that has substance, is rational and sequential in nature.

- Abstract random learners are distinguished by their attention to human behavior and a capacity to sense and interpret "vibrations." They associate the medium with the message, prefer to receive information in an unstructured manner and therefore like group discussions and busy environment.

To help educators match student learning styles to teacher instruction styles, a variety of measurement techniques has been developed. One of the most widely tested is the Learning Style Inventory (LSI) developed by Rita Dunn of St. John's University, Kenneth Dunn, superintendent of schools in Hewitt, N.Y., and Gary E. Price of the University of Kansas. LSI provides a student profile based on 24 factors, including a student's preference for structured or unstructured learning, classroom design, motivation, and other factors.

LSI developers claim that through their computerized measurement technique it is possible to predict which students will function well in a traditional, individualized, open or alternative instructional program. Also, they claim, it is possible to determine which resources—programs, games, films, tapes, etc.—will assist individual students to achieve.

Grouping students according to their learning styles instead of ability levels is a relatively recent development in education. It is an approach that is catching on slowly and for which there is as yet little evaluative data with which to assess its impact on teacher and learner. But preliminary indicators suggest that matching student learning styles to teacher instructional preferences may be a more effective and egalitarian approach to mass education than ability grouping.

Since research and experience indicate that boys have difficulty learning to read and girls have trouble learning mathematics, educators should determine whether to delay teaching these subjects until the childrens' brains are more developed or devise new instruction techniques that take boy-girl brain differences into account. If, as Herman Epstein asserts, brain growth in 10-12-year-old girls is three times that of boys the same age, girls should be exposed to advanced problem solving in science and mathematics at the sixth, seventh, and eighth grade levels. Instead, they usually have to wait until high school, which may be more timely for boys but too late for girls if they are to make the most effective use of their brain development patterns.

And since student learning styles vary markedly, teachers might consider ways to develop more effective instructional techniques. In observing more than 1,000 classrooms across the country, a research team headed by John Goodlad of UCLA found a "depressing sameness" in teaching techniques. After the first few years of schooling, the researchers found little or no variety in the way teachers teach, what educators call pedagogical style. From about fourth grade on, they found most teaching in American schools is conducted in a lecture style, the teacher talking in a flat unemotional tone, with little student involvement or feedback and an air of passivity permeating the classroom.

CONCLUSION

At no time in their lives are there greater differences in the physical, social, emotional and intellectual development of youngsters than during the period of ten to fourteen years of age - the middle grade years. Schools and educators for years have known of these differences, but have lacked the necessary knowledge needed to deal with the diversity and to accommodate the changes.

In the past several years, however, research has done much to explain what is affecting the middle grade student and why these changes are occurring. It is important that schools and educators who deal with the middle grade student use the results of these recent studies to build on the needs, strengths and abilities of evolving adolescents to assure that each receives the best education possible. Further, it is critical for schools and school personnel to keep abreast of current developments related to the nature of adolescence and adolescents. Only in this way can they assure that each will receive an optimum learning experience.

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Thornburg, Hershel D. "Developmental Characteristics of Middle Schoolers and Middle School Organization," Contemporary Education, Vol. 52, No. 3, Spring 1981, pp. 2-6.

Toepfer, Conrad F., Jr. "Curriculum Planning Priorities for the Middle School" in Middle School in the Making. Washington, DC: Association for Supervision and Curriculum Development, 1974 (reprinted 1975), pp. 74-79.

ANNOTATED BIBLIOGRAPHY OF MATERIALS ON THE MIDDLE-GRADE STUDENT

The Educational Programs and Studies Information Service (EPSIS) of the New York State Education Department conducted a computer search for available materials on the middle-grade student. Department staff reviewed the materials and selected those that contained the most and best information. The annotated bibliography represents a selected listing of those materials judged by Department staff as having the most potential value for school personnel interested in learning more about the middle-grade student.

Each of the items listed in the bibliography is identified by either an ED number or an EJ number. Those items with an EJ number are journal articles and are available through local libraries or through inter-library loan. The EJ numbered references are not available through EPSIS or the New York State Education Department.

Those items with an ED number designation are documents or reports and are available on microfiche through EPSIS. Persons interested in those items with ED numbers should request them from:

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KEY TO ANNOTATED BIBLIOGRAPHY

CODE	DESCRIPTION
AN	Annotation Identification Number
AU	Author of Material
IN	Institution Which Developed Material
TI	Title of Material
SO	Source of Material
SN	Sponsoring Agency
NT	Notes on Materials (pages, etc.)
YR	Year Material Published
AB	Abstract of Material

NOTE: IN SOME CASES, THE PROJECTS OR ACTIVITIES DISCUSSED IN ONE OR MORE OF THE BIBLIOGRAPHIC ITEMS NO LONGER EXIST OR FUNCTION AS DESIGNATED FOR REASONS WHICH MAY OR MAY NOT BE RELATED TO EDUCATION. DEPARTMENT STAFF HAVE ELECTED TO INCLUDE THESE REFERENCES IN THE BIBLIOGRAPHY BECAUSE THEY PROVIDE INFORMATION OR MATERIALS WHICH COULD BE OF BENEFIT TO LOCAL SCHOOL DISTRICTS.

1
AN ED236300.
AU IANNI, FRANCIS A.J.
IN COLUMBIA UNIV. NEW YORK, N.Y. TEACHERS COLLEGE; ERIC CLEARINGHOUSE ON URBAN EDUCATION, NEW YORK, N.Y. BBB00899; QPX17850.
TI HOME, SCHOOL, AND COMMUNITY IN ADOLESCENT EDUCATION. ERIC/CUE URBAN DIVERSITY SERIES NO. 84.
SN NATIONAL INST. OF EDUCATION (ED), WASHINGTON, DC. EDN00001.
PR EDRS PRICE - MF01/PC05 PLUS POSTAGE.
AV ERIC CLEARINGHOUSE ON URBAN EDUCATION, BOX 40, TEACHERS COLLEGE, COLUMBIA UNIVERSITY, NEW YORK, NY 10027 ($5.00).
NT 104P.
YR 83.
AB CURRENT RESEARCH ON ADOLESCENCE PROVIDES PLENTY OF FACTS ABOUT DELINQUENCY, UNEMPLOYMENT, AND ILLEGITIMACY, YET TELLS US LITTLE OR NOTHING ABOUT THE INNER LIFE OF ADOLESCENTS. IN AN ATTEMPT TO PROVIDE MORE INFORMATION, THE RESEARCH REPORTED ON HERE DESCRIBES THE "PERIODS" OF ADOLESCENCE AS THEY ARE STRUCTURED IN THE VARIOUS SOCIAL-INSTITUTIONAL CONTEXTS OF THE FAMILY, THE SCHOOL, THE WORKPLACE, THE MEDIA, THE CRIMINAL JUSTICE SYSTEM, AND THE PEER GROUP. ALSO DISCUSSED IS HOW THESE SOCIAL SYSTEMS INTERACT TO PRODUCE A CODE OR CODES OF RULES INTERNALIZED BY INDIVIDUAL ADOLESCENTS. DATA FROM ETHNOGRAPHIC FIELDWORK IN URBAN, SUBURBAN, AND RURAL COMMUNITIES IN THE UNITED STATES, FROM PSYCHODYNAMIC INTERVIEWS WITH YOUTH IN THESE SAME COMMUNITIES, AND FROM THE RESEARCH AND PRACTICE LITERATURE IN EACH OF THE INSTITUTIONAL CONTEXTS ILLUSTRATE THE CONNECTIONS AND CONFLICTS BETWEEN AND AMONG THE INSTITUTIONAL CONTEXTS AND HOW YOUTH INTERNALIZE THIS PATTERN OF ORGANIZATION. THE FINDINGS OF THE RESEARCH LEAD TO THE DEVELOPMENT OF A MODEL OF THE PSYCHOSOCIAL ORGANIZATION OF ADOLESENCE. THIS MODEL EMPHASIZES LINKAGE AMONG SOCIAL INSTITUTIONS IN A COMMUNITY APPROACH TO YOUTH IN ORDER TO HELP THE ADOLESCENT MAKE THE TRANSITION TO ADULTHOOD WITHOUT UNNECESSARY DELAYS AND CONFUSION. (CMG).

2
AN ED234601.
AU EHRLICH, M. I.
TI WHO'S THAT ADOLESCENT IN YOUR CLASS? UNDERSTANDING THE PSYCHOSOCIAL WORLD OF THE ADOLESCENT.
SO MEXTESOL JOURNAL; V5 N4 P22-36 1982. 82.
PR EDRS PRICE - MF01/PC01 PLUS POSTAGE.
NT 16P. ; PAPER PRESENTED AT THE ANNUAL MEXTESOL CONVENTION (8TH, GUADALAJARA, MEXICO, 1981).
YR 82.

AB THE PSYCHOSOCIAL CHARACTERISTICS OF ADOLESCENTS ARE DESCRIBED IN ORDER TO ASSIST TEACHERS I INTERACTING MORE EFFECTIVELY WITH THEIR STUDENTS. EXAMINATION OF STUDENTS ABOUT THE PRESENCE OF PATHOLOGY IN ADOLESCENCE REVEALS THAT THE TYPICAL ADOLESCENT IS NOT A STEREOTYPICALLY IMPULSE-RIDDEN, UNCONTROLLABLE PERSON. MANY OF AN ADOLESCENT'S DIFFICULTIES STEM FROM AN UNSUCCESSFUL RESOLUTION OF THE PSYCHOSOCIAL TASKS CONFRONTED IN ADOLESCENCE. THE FIVE PSYCHOSOCIAL TASKS MOST RELEVANT FOR THE CLASSROOM TEACHER ARE ACCEPTING ONE'S OWN PHYSIQUE AND SEXUAL ROLE, ESTABLISHING NEW PEER RELATIONSHIPS, ATTAINING EMOTIONAL INDEPENDENCE, ACQUIRING SOCIALLY RESPONSIBLE BEHAVIOR, AND BUILDING VALUES. PROBLEM AREAS THAT ARISE WHEN THE ADOLESCENT FAILS TO DEAL SUCCESSFULLY WITH THESE TASKS ARE DELINEATED. TEACHERS CAN HELP OVERCOME THESE PROBLEMS BY SETTING AN EXAMPLE FOR THE STUDENTS, MAINTAINING APPROPRIATE CLASSROOM LIMITS, PROVIDING A WIDE RANGE FOR ACCEPTABLE EMOTIONAL EXPRESSION, PROVIDING OPPORTUNITIES FOR INDEPENDENCE AND INDIVIDUALITY, AND LEARNING TO LISTEN AND COMMUNICATE EFFECTIVELY WITH THE ADOLESCENT. (RW).

3
AN EJ284771.
AU BOXER, ANDREW M.; AND OTHERS.
TI PUBERTY: PHYSICAL CHANGE AND ITS SIGNIFICANCE IN EARLY ADOLESCENCE.
SO THEORY INTO PRACTICE; V22 N2 P85-90 SPR 1983. 83.
AV REPRINT: UMI.
YR 83.
AB PUBERTY CULMINATES IN A DRAMATIC AND VISUALLY APPARENT SET OF CHANGES IN EACH INDIVIDUAL. SOCIAL AND PSYCHOLOGICAL EFFECTS OF THE MEANING OF THESE CHANGES ARE AN IMPORTANT COMPONENT IN UNDERSTANDING THE SIGNIFICANCE OF PUBERTY FOR ADOLESCENTS AND THEIR BEHAVIOR. (CJ).

4
AN EJ284390.
AU KOSKY, R.
TI CHILDHOOD SUICIDAL BEHAVIOUR.
SO CHILD PSYCHOLOGY AND PSYCHIATRY AND ALLIED DISCIPLINES; V24 N3 P457-68 JUL 1983. JUL83.
YR 83.
AB A TOTAL OF 20 CHILDREN UNDER 14 YEARS OF AGE WHO WERE ADMITTED TO A HOSPITAL FOLLOWING SUICIDE ATTEMPTS WERE COMPARED WITH 50 PSYCHIATRICALLY ILL, NONSUICIDAL INPATIENTS OF SIMILAR AGE. SUICIDAL BEHAVIOR WAS ASSOCIATED WITH THE MALE SEX, PERSONAL EXPERIENCES OF SIGNIFICANT LOSS, ACADEMIC UNDERACHIEVEMENT, MARITAL DISINTEGRATION AMONG PARENTS, AND PAST INTRAFAMILIAL VIOLENCE, INCLUDING PHYSICAL ABUSE OF THE CHILD. (RH).

5
AN ED231541.
AU HAWKINS, RAYMOND C. II.
TI CHILDHOOD STRESS AND COPING: A REVIEW AND COGNITIVE-DEVELOPMENTAL THEORY.
PR EDRS PRICE - MF01/PC02 PLUS POSTAGE.

NT 45P. ; AN EARLIER VERSION OF THIS PAPER WAS PRESENTED AT THE ANNUAL CONVENTION OF THE TEXAS PSYCHOLOGICAL ASSOCIATION (HOUSTON, TX, NOVEMBER, 1981).
YR 82.
AB THIS PAPER REVIEWS RECENT EMPIRICAL AND CONCEPTUAL STUDIES PERTAINING TO STRESS IN CHILDHOOD AND OFFERS AN INTEGRATIVE, COGNITIVE-DEVELOPMENTAL THEORY FOR UNDERSTANDING CHILDHOOD STRESS AND COPING. THE THEORY BUILDS UPON HUNT'S (1979) VIEW OF THE EPIGENESIS OF INTRINSIC MOTIVATION AND BLOCK'S (1982) FORMULATION OF ASSIMILATION AND ACCOMMODATION PROCESSES IN PERSONALITY DYNAMICS. KEY THEORETICAL ASSUMPTIONS IN THE LITERATURE ON ADULT STRESS, ADAPTATION, AND COPING ARE FIRST POINTED OUT. NINE KEY QUESTIONS ARE FORMULATED TO ASSESS THE USEFULNESS OF THE ADULT STRESS-COPING PARADIGM FOR UNDERSTANDING STRESS IN CHILDREN AND ADOLESCENTS. WITH RESPECT TO THE THEORETICAL ASSUMPTIONS OF THE ADULT STRESS-COPING PARADIGM, THE FIRST TWO QUESTIONS ADDRESS THE "STRESSOR/APPRAISAL/DISTRESS" SEQUENCE AND THE PRIMACY OF EXTERNAL STRESSORS IN PRODUCING DISTRESS REACTIONS. THE THIRD QUESTION FOCUSES ON THE DISEASES-OF-ADAPTATION SYNDROME. QUESTIONS FOUR THROUGH SEVEN ADDRESS THE IMPORTANCE OF ORGANISMIC TENDENCIES IN MODERATING THE RELATIONSHIP BETWEEN STRESS AND DISTRESS, AS WELL AS THE DEVELOPMENT OF THESE COPING RESOURCES. THE EIGHTH QUESTION INQUIRES INTO THE EFFECTIVENESS OF STRESS-COPING INTERVENTIONS FOR TREATING CHILDREN'S BEHAVIOR DISORDERS. FINALLY, THE NINTH QUESTION SETS THE STAGE FOR THE PRESENTATION OF AN INTEGRATIVE FORMULATION FOR UNDERSTANDING CHILDHOOD STRESS AND COPING. (RH).

6
AN ED229664.
AU PRESSEISEN, BARBARA Z.
IN RESEARCH FOR BETTER SCHOOLS, INC. PHILADELPHIA, PA. (UGP75675).
TI UNDERSTANDING ADOLESCENCE: ISSUES AND IMPLICATIONS FOR EFFECTIVE SCHOOLS.
SN NATIONAL INST. OF EDUCATION (ED), WASHINGTON, DC. (EDN00001).
PR EDRS PRICE - MF01/PC03 PLUS POSTAGE.
NT 63P.
YR 82.
AB CURRENTLY THERE IS A STRONG MOVEMENT TO MAKE SCHOOLS MORE EFFECTIVE BY RAISING THE QUALITY OF INSTRUCTION, PROGRAM DESIGN AND ORGANIZATIONAL MANAGEMENT. THIS PAPER REVIEWS RECENT RESEARCH IN ADOLESCENT DEVELOPMENT AS A MAJOR FOCUS FOR DETERMINING THE SUCCESS OR FAILURE OF SPECIFIC PRACTICES IN SECONDARY SCHOOLS. FACTORS OF SCHOOL EFFECTIVENESS ARE EXAMINED IN TERMS OF THEIR SIGNIFICANCE FOR THE EFFECTIVE SCHOOLS MOVEMENT AND FOR WAYS IN WHICH THESE FACTORS MAY RELATE TO RECENT RESEARCH ON ADOLESCENTS. CONCLUSIONS ARE DRAWN ABOUT HOW THE TWO AREAS OF STUDY ADDRESS COMMON ISSUES AS WELL AS WAYS IN WHICH THEY DIVERGE. THE FIRST PART OF THE PAPER EXAMINES CURRENT LITERATURE TO BUILD A GENERAL CONCEPTION OF ADOLESCENCE. THE SECOND PART IS CONCERNED WITH MAJOR ISSUES OF ADOLESCENCE AND THEIR RELATIONSHIP TO FACTORS OF SCHOOL EFFECTIVENESS. THE THIRD PART SEEKS TO DETERMINE THE IMPLICATIONS OF THESE TWO AREAS FOR IDENTIFYING DESIRABLE CHANGES IN SECONDARY SCHOOLS. EDUCATION IN URBAN SETTINGS IS ALSO EXAMINED. A LIST OF REFERENCES IS INCLUDED.

(JAC).

7
AN EJ281533.
AU KING, P.M.; AND OTHERS.
TI THE JUSTIFICATION OF BELIEFS IN YOUNG ADULTS: A LONGITUDINAL STUDY.
SO HUMAN DEVELOPMENT; V26 N2 P106-16 MAR-APR 1983. 83.
AV REPRINT: UMI.
YR 83.
AB REPORTS A TWO-YEAR LONGITUDINAL STUDY OF 55 ADOLESCENTS AND YOUNG ADULTS WHO WERE DIVIDED INTO THREE GROUPS AND GIVEN REFLECTIVE JUDGMENT INTERVIEWS AND THE CONCEPT MASTERY TEST TO INVESTIGATE SEQUENTIALITY OF REFLECTIVE JUDGMENT STAGES. RESULTS INDICATE SUPPORT FOR SEVEN HYPOTHESIZED SHIFTS IN EPISTEMIC ASSUMPTIONS OVER TIME. (AUTHOR/RH).

8
AN EJ277393.
AU CHILMAN, CATHERINE S.
TI THE DEVELOPMENT OF ADOLESCENT SEXUALITY.
SO JOURNAL OF RESEARCH AND DEVELOPMENT IN EDUCATION; V16 N2 P16-26 WIN 1983. 83.
AV REPRINT: UMI.
YR 83.
AB A NUMBER OF INTERACTING FACTORS ARE DISCUSSED WHICH SIGNIFICANTLY INFLUENCE THE DEVELOPMENT AND EXPRESSION OF ADOLESCENT SEXUALITY, INCLUDING: (1) BIOLOGICAL DEVELOPMENT; (2) SOCIETAL TRENDS; (3) PSYCHOLOGICAL ASPECTS; (4) FAMILIAL PATTERNS; AND (5) HISTORICAL AND POLITICAL INFLUENCES. ADOLESCENT COGNITIVE DEVELOPMENT AND PSYCHOANALYTIC THEORIES CONCERNING SEXUALITY ARE ALSO NOTED. (PP).

9
AN EJ276816.
AU MARKEY, PENNY S.; MOORE, MARY KEVIN.
TI THE YEAR-ROUND READING PROGRAM: AN EXPERIMENTAL ALTERNATIVE.
SO TOP OF THE NEWS; V39 N2 P155-61 WIN 1983. 83.
AV REPRINT: UMI.
YR 83.
AB DESCRIBES EXPERIMENTAL 2-YEAR PILOT PROJECT CONDUCTED AT 21 RANDOMLY SELECTED COMMUNITY LIBRARIES IN LOS ANGELES COUNTY PUBLIC LIBRARY SYSTEM TO TEST FEASIBILITY AND MEASURE RESULTS OF A CHILDREN'S SERVICES PROPOSAL. THE PROPOSED YEAR-ROUND READING PROGRAM IS DESIGNED TO MEET NEEDS OF CHANGING ACADEMIC PROGRAMS IN SCHOOLS AND CHANGING JUVENILE CLIENTELE. (EJS).

10
AN EJ276414.
AU DESHLER, DONALD D.; AND OTHERS.
TI LEARNING DISABILITIES IN ADOLESCENT AND YOUNG ADULT POPULATIONS: RESEARCH IMPLICATIONS.

SO FOCUS ON EXCEPTIONAL CHILDREN; V15 N1 P1-12 SEP 1982. SEP82.
YR 82.
AB THE AUTHOR'S FINDINGS ABOUT THE EFFECTS OF LEARNING DISABILITIES ON ADOLESCENTS ARE DETAILED ACCORDING TO FOUR MAJOR AREAS (SAMPLE SUBTOPICS IN PARENTHESES): ACADEMIC ACHIEVEMENT AND ABILITY (LOW ACHIEVEMENT AND UNDERACHIEVEMENT); COGNITIVE PROCESSING (RELATIONSHIP BETWEEN MOTIVATION AND STRATEGY USE); SETTING DEMANDS (INDEPENDENT FUNCTIONING); AND ACADEMIC INTERVENTIONS (A LEARNING STRATEGIES APPROACH). (CL).

11
AN EJ274942.
AU BURTIS, P. J.
TI CAPACITY INCREASE AND CHUNKING IN THE DEVELOPMENT OF SHORT-TERM MEMORY.
SO JOURNAL OF EXPERIMENTAL CHILD PSYCHOLOGY; V34 N3 P387-413 DEC 1982. DEC82.
AV REPRINT: UMI.
YR 82.
AB THE POSSIBILITY OF AN AGE-RELATED INCREASE IN THE CAPACITY OF THE SHORT-TERM STORE WAS EXAMINED IN TWO EXPERIMENTS, AND AN "M-OPERATOR" MODEL WAS PROPOSED TO ACCOUNT FOR THE DATA. TOGETHER, THE TWO EXPERIMENTS SHOW THAT AN IMPORTANT PART OF SHORT-TERM MEMORY DEVELOPMENT CAN BE EXPLAINED AS GROWTH IN SHORT-TERM STORE CAPACITY. (AUTHOR/MP).

12
AN EJ273975.
AU SILBER, THOMAS J.
TI THE DIFFERENTIAL DIAGNOSIS OF FUNCTIONAL SYMPTOMS IN ADOLESCENCE.
SO ADOLESCENCE; V17 N68 P769-78 WIN 1982. 82.
AV REPRINT: UMI.
YR 82.
AB FUNCTIONAL COMPLAINTS CONSTITUTE THE MAJOR REASON WHY ADOLESCENTS VISIT THE PHYSICIAN'S OFFICE. THESE COMPLAINTS MAY COEXIST WITH ORGANIC ILLNESS OF MINOR OR MAJOR SIGNIFICANCE. PROPOSES A DEFINITION OF FUNCTIONAL DISORDERS, SETS FORTH A CLASSIFICATION OF THE DIFFERENTIAL DIAGNOSIS OF THESE DISORDERS AND SUGGESTS TECHNIQUES FOR THEIR MANAGEMENT. (AUTHOR).

13
AN EJ271992.
AU HOWELL, FRANK M.; FRESE, WOLFGANG.
TI EARLY TRANSITION INTO ADULT ROLES: SOME ANTECEDENTS AND OUTCOMES.
SO AMERICAN EDUCATIONAL RESEARCH JOURNAL; V19 N1 P51-73 SPR 1982. 82.
AV REPRINT: UMI.
YR 82.
AB FOCUSING ON PREADOLESCENCE TO LATE-ADOLESCENCE, THIS RESEARCH EXAMINES HOW "EARLY" EXIT FROM THE STUDENT ROLE AND "EARLY" ENTRY INTO THE ADULT ROLE REFLECT FACTORS OPERATING PRIOR TO ADOLESCENCE. ONLY LEAVING SCHOOL EARLY APPEARS TO BE RELATED TO PREADOLESCENT

CAREER DECISIONS AND ACADEMIC PERFORMANCE IN HIGH SCHOOL. (AUTHOR/BW).

14
AN ED222452.
AU WEHLAGE, GARY; AND OTHERS.
IN WISCONSIN CENTER FOR EDUCATION RESEARCH, MADISON. (BBB20214).
TI EFFECTIVE PROGRAMS FOR THE MARGINAL HIGH SCHOOL STUDENT: A REPORT TO THE WISCONSIN GOVERNOR'S EMPLOYMENT AND TRAINING OFFICE.
SN GOVERNOR'S EMPLOYMENT AND TRAINING OFFICE, MADISON, WIS. (BBB18403). NATIONAL INST. OF EDUCATION (ED), WASHINGTON, DC. (EDN00001).
PR EDRS PRICE - MF01/PC08 PLUS POSTAGE.
NT 200P.
YR 82.
AB THIS FOUR-PART REPORT PROVIDES BOTH A THEORETICAL FRAMEWORK AND EMPIRICAL DATA CONCERNING EFFECTIVE PROGRAMS FOR THE MARGINAL HIGH SCHOOL STUDENT. PART 1 ADDRESSES THE PROBLEM OF ADOLESCENT SOCIAL DEVELOPMENT AS A BROAD EDUCATIONAL GOAL. PART 2 PRESENTS A SET OF SIX CASE STUDIES DESCRIBING SPECIAL PROGRAMS IN WISCONSIN DESIGNED FOR THE MARGINAL STUDENT: (1) REUTHER EDUCATION AT LARGE (KENOSHA); (2) LINCOLN EDUCATIONAL ALTERNATIVE PROGRAM (WISCONSIN RAPIDS); (3) PAPER HIGH SCHOOL (OCONOMOWOC); (4) SCHOOL WITHIN A SCHOOL (JANESVILLE); (5) ALTERNATIVE LEARNING PROGRAMS (MCFARLAND); AND (6) ACADEMIC DEVELOPMENT OPPORTUNITY PROGRAM (MILWAUKEE). THESE PROGRAMS WERE SELECTED FOR STUDY BECAUSE THEY APPEARED TO BE EFFECTIVE IN REDUCING DROPOUT AND TRUANCY AND HAD BEEN PRAISED BY BOTH EDUCATORS AND STUDENTS. IN PART 3, AN INTERPRETATION OF THE CASE STUDY DATA IS OFFERED THAT DERIVES A SET OF GENERALIZABLE CHARACTERISTICS ABOUT EFFECTIVE PROGRAMS: THESE CHARACTERISTICS ARE CATEGORIZED IN TERMS OF ADMINISTRATION/ORGANIZATION, TEACHER CULTURE, STUDENT CULTURE, AND CURRICULUM AND INSTRUCTION. PART 4 BEGINS WITH AN EXPLORATION OF ONE OF THE MOST PROMISING INNOVATIONS FOUND IN EFFECTIVE PROGRAMS--EXPERIENTIAL EDUCATION. UNDER THE ASSUMPTION THAT PUBLIC SCHOOLS ARE NOT LIKELY TO IMPLEMENT WIDELY THIS TYPE OF CURRICULUM FOR THE MARGINAL STUDENT, A PUBLIC POLICY OF LIMITED VOUCHERS IS ADVOCATED TO STIMULATE EXPERIENTIAL EDUCATION PROGRAMS. (AUTHORS/JD).

15
AN EJ270451.
TI WHAT ARE MIDDLE SCHOOLS GOOD FOR.
SO INSTRUCTOR; V92 N4 P30-33 NOV-DEC 1982. 82.
AV REPRINT: UMI.
YR 82.
AB MIDDLE SCHOOL PRACTICES SHOULD REFLECT RESEARCH SHOWING HOW STUDENTS ENTERING ADOLESCENCE, AT 10-14 YEARS OF AGE, ARE DIFFERENT FROM OTHER CHILDREN. MIDDLE SCHOOL STUDENTS ARE CHANGING PHYSICALLY, INTELLECTUALLY, AND EMOTIONALLY. SCHOOLS SHOULD EMPHASIZE: (1) ACTIVE LEARNING EXPERIENCES; (2) STUDENT-CENTERED METHODS; (3) RECOGNITION OF INDIVIDUAL DIFFERENCES; AND (4) THE TEACHING OF LEARNING SKILLS RATHER THAN OF CONTENT. (PP).

16
AN EJ269647.
AU ELLIS, DAVID W.; DAVIS, LUCY T.
TI THE DEVELOPMENT OF SELF-CONCEPT BOUNDARIES ACROSS THE ADOLESCENT YEARS.
SO ADOLESCENCE; V17 N67 P695-710 FALL 1982. 82.
AV REPRINT: UMI.
YR 82.
AB OUTLINES ADOLESCENT SELF-CONCEPT AS A METHOD FOR UNDERSTANDING THE ADOLESCENT EXPERIENCE AND MAJOR CONTROVERSIES INVOLVED IN THIS AGE SPAN. DEFINES ADOLESCENCE AND REVIEWS THEORETICAL UNDERSTANDING OF ADOLESCENT SELF-CONCEPT. GENERAL ISSUES REGARDING COGNITION ARE DISCUSSED. A MODEL OF THE BOUNDARY ORGANIZATION OF ADOLESCENT SELF-CONCEPT IS PRESENTED. (JAC).

17
AN ED221516.
AU CANTWELL, ZITA M.
IN CITY UNIV. OF NEW YORK, BROOKLYN, NY. BROOKLYN COLL. SCHOOL OF EDUCATION. (BBB20683).
TI DEVELOPMENT AT EARLY ADOLESCENCE: IMPLICATIONS FOR CONTINUING PROFESSIONAL AND PREPROFESSIONAL EDUCATION OF TEACHERS. EARLY ADOLESCENT PROJECT.
SN NEW YORK CITY BOARD OF EDUCATION, N.Y. (BBB15635). UNITED FEDERATION OF TEACHERS, NEW YORK, N.Y. (QPX88850).
PR EDRS PRICE - MF01/PC02 PLUS POSTAGE.
NT 49P. ; ALSO SUPPORTED IN PART BY THE COUNCIL OF SUPERVISORS AND ADMINISTRATORS, NEW YORK CITY OFFICE.
YR 82.
AB SINCE MAY 1980, PARTICIPANTS IN THE EARLY ADOLESCENT PROJECT AT BROOKLYN COLLEGE OF THE CITY UNIVERSITY OF NEW YORK HAVE STUDIED THE EARLY ADOLESCENT AS A LEARNER IN A SERIES OF COLLOQUIA, DISCUSSIONS, AND OBSERVATIONS. THE PURPOSE OF THE STUDY HAS BEEN TO DEVELOP RECOMMENDATIONS FOR SCHOOLING OF THE EARLY ADOLESCENT AND FOR CONTINUING AND PREPROFESSIONAL EDUCATION OF TEACHERS OF THIS AGE GROUP. THIS DOCUMENT IS BASED ON CONTRIBUTIONS FROM PROJECT PARTICIPANTS AND INFORMATION FROM PROJECT ACTIVITIES IN COMBINATION WITH A REVIEW OF SELECTED LITERATURE RELATED TO THE EARLY ADOLESCENT AS A LEARNER. CURRENT INFORMATION ON PSYCHOSOCIAL, NEUROPSYCHOLOGICAL, AND COGNITIVE CHARACTERISTICS OF THE EARLY ADOLESCENT LEARNER, AS WELL AS SELECTED INFORMATION ON THE INSTRUCTION OF THE EARLY ADOLESCENT, IS PRESENTED. CONCLUSIONS AND RECOMMENDATIONS ARE MADE FOR POLICIES AND CURRICULA FOR THE EARLY ADOLESCENT AND FOR THE EDUCATION OF TEACHERS FOR THIS GROUP. REVIEWS OF CURRENT WRITINGS AND DISCUSSIONS ARE PRESENTED FOR: (1) THE BIOLOGICAL DEVELOPMENT OF THE ADOLESCENT; (2) THE HUMAN BRAIN, HEMISPHERIC PROCESSES, DIFFERENCES IN TYPES AND STYLES OF THINKING AND LEARNING; (3) COGNITIVE DEVELOPMENT FROM CONCRETE TO FORMAL THINKING, METACOGNITION, EVALUATION OF THE LEVEL OF COGNITIVE DEVELOPMENT, AND PERFORMANCE VARIANCE; (4) PERSONALIZED EDUCATION FOR THE ADOLESCENT; (5) MANAGEMENT OF LEARNING AND THE TRANSITION FROM CONCRETE TO FORMAL THINKING; (6) SUGGESTED PRACTICA FOR THE CONTINUING PROFESSIONAL EDUCATION OF TEACHERS OF THE EARLY

ADOLESCENT; AND (7) PREPROFESSIONAL PREPARATION FOR TEACHERS OF THE EARLY ADOLESCENT. (JD).

18
AN ED221354.
AU VAIDYA, NARENDERA.
IN REGIONAL COLL. OF EDUCATION, AJMER (INDIA). (BBB14226).
TI RESEARCHES ON ADOLESCENT THOUGHT: A FRAMEWORK.
PR EDRS PRICE - MF01 PLUS POSTAGE. PC NOT AVAILABLE FROM EDRS.
NT 325P.
YR 82.
AB THIS DOCUMENT PRESENTS RESEARCH STUDIES/FINDINGS AND PROVIDES A DEVELOPING POINT OF VIEW ON ADOLESCENT THOUGHT. THE FIRST CHAPTER DISCUSSES THE NATURE AND DEFINITIONS OF THINKING. THE SECOND AND THIRD CHAPTERS DISCUSS FRAMEWORKS FOR ADOLESCENT THOUGHT (FOCUSING ON THE GESTALT SCHOOL, GENEVA SCHOOL, AND ACCELERATED LEARNING) AND SURVEY STUDIES ON PROBLEM-SOLVING IN ELEMENTARY/SECONDARY SCHOOL SCIENCE. THE FOURTH CHAPTER SUMMARIZES 13 STUDIES UNDERTAKEN AT THE REGIONAL COLLEGE OF EDUCATION (AJMER). TOPICS OF STUDIES INCLUDE THINKING AMONG ADOLESCENT AGE SCIENCE STUDENTS; FACTORIAL STUDY OF ADOLESCENT THOUGHT USING PIAGETIAN TASKS; PROBLEM-SOLVING BEHAVIOR IN PHYSICS; GROWTH OF EXCLUSION VARIABLES DURING ADOLESCENCE; ROLE OF HYPOTHESES IN SOLVING SCIENCE PROBLEMS; FORMULATING/TESTING HYPOTHESES DURING ADOLESCENCE; CONCEPT FORMATION AND INTELLECTUAL DEVELOPMENT; FORMATION OF EXPERIMENTAL MIND DURING ADOLESCENCE; RELATIONSHIP BETWEEN HYPOTHESIS TESTING ABILITY IN SCIENCE AND CREATIVITY; PROBLEM-SOLVING ABILITY AND RELATIVE PERSONALITY TRAITS USING PIAGETIAN TASKS; EFFECT OF TRAINING ON STATING/TESTING HYPOTHESES; CONSERVATION OF MASS, WEIGHT, VOLUME, AND CONCEPT ATTAINMENT IN AGE 10-18 INDIAN STUDENTS; AND CHILD'S CONCEPTION OF MOVEMENT. THE FIFTH CHAPTER HIGHLIGHTS (IN TABLE FORM) MAJOR FINDINGS FROM 112 STUDIES. THE FINAL CHAPTER PRESENTS A CURRENT PICTURE OF ADOLESCENT THOUGHT. A FULL BIBLIOGRAPHY IS ALSO AVAILABLE FROM THE AUTHOR UPON REQUEST. (JN).

19
AN EJ269387.
AU MCDONALD, GERALD W.
TI PARENTAL POWER PERCEPTIONS IN THE FAMILY: THE INFLUENCE OF ADOLESCENT CHARACTERISTICS.
SO YOUTH AND SOCIETY; V14 N1 P3-31 SEP 1982. SEP82.
AV REPRINT: UMI.
YR 82.
AB DESCRIBES RESEARCH ON THE INFLUENCE OF SEX, GRADE LEVEL, RELIGIOSITY, AND BIRTH ORDER ON ADOLESCENTS' PERCEPTIONS OF THEIR PARENTS' POWER/AUTHORITY ON SUCH DIMENSIONS AS CONTROL OF ECONOMIC RESOURCES, DECISION-MAKING, AND REWARDS/PUNISHMENTS; GUIDANCE; RIGHT TO EXERCISE POWER; AND KNOWLEDGE/COMPETENCE IN ADOLESCENT HETEROSEXUAL RELATIONSHIPS AND EDUCATIONAL AREAS OF ADOLESCENT LIFE. (MJL).

20

AN EJ268892.
AU SIMPSON, RONALD D.; TROOST, KAY MICHAEL.
TI INFLUENCES ON COMMITMENT TO AND LEARNING OF SCIENCE AMONG ADOLESCENT STUDENTS.
SO SCIENCE EDUCATION; V66 N5 P763-81 OCT 1982. OCT82.
AV REPRINT: UMI.
YR 82.
AB A LONGITUDINAL INVESTIGATION IS BEING CONDUCTED TO EXAMINE COMMITMENT TO SCIENCE (ATTITUDES) AND SCIENCE ACHIEVEMENT AMONG ADOLESCENTS (N=4,500) IN RELATION TO INDIVIDUAL/FAMILY/SCHOOL INFLUENCES. ADDRESSED ARE THE INVESTIGATION'S THEORETICAL FRAMEWORK AND MAJOR VARIABLES. DATA ANALYSES WILL SERVE TO EXPLAIN RELATIONSHIPS AMONG ANTECEDENT/INTERACTIONAL/OUTCOME VARIABLES AND TO SUGGEST FUTURE PRACTICES IN SCIENCE EDUCATION. (AUTHOR/JN).

21
AN EJ265515.
AU ROBERTS, ALBERT R.
TI ADOLESCENT RUNAWAYS IN SUBURBIA: A NEW TYPOLOGY.
SO ADOLESCENCE; V17 N66 P387-96 SUM 1982. 82.
AV REPRINT: UMI.
YR 82.
AB DISCUSSES SEVERAL CLUSTERS OF PERSONAL AND SITUATIONAL VARIABLES WHICH ARE CHARACTERISTIC OF RUNAWAYS AS COMPARED TO NONRUNAWAYS. HIGHLIGHTS RESULTS OF QUALITATIVE RESEARCH ON SUBURBAN RUNAWAYS. DEVELOPS FIVE-POINT CONTINUUM OF PARENT-YOUTH CONFLICT. SUGGESTS INTEGRATION OF TYPOLOGIES IS IMPORTANT IN THE DEVELOPMENT OF BASIC ASSESSMENT TOOLS FOR ADOLESCENTS. (AUTHOR/RC).

22
AN EJ265365.
AU OFFER, DANIEL.
TI ADOLESCENT TURMOIL.
SO NEW YORK UNIVERSITY EDUCATION QUARTERLY; V13 N2 P29-32 WIN 1982. 82.
YR 82.
AB EXAMINES RECENT EMPIRICAL EVIDENCE TO TEST THEORIES POSTULATED IN SEPARATE WORKS BY G. STANLEY HALL AND ANNA FREUD THAT ADOLESCENTS MUST EXPERIENCE PSYCHOLOGICAL TURBULENCE IN THE TRANSITION TO ADULTHOOD. CONCLUDES THAT TURMOIL IS NO LONGER A NECESSARY CONDITION OF ADOLESCENCE AND THAT THOSE WHO DO EXPERIENCE IT NEED PSYCHIATRIC ATTENTION. (AUTHOR/MJL).

23
AN ED216471.
AU HOUCK, CHERRY; AND OTHERS.
TI THE LEARNING DISABLED ADOLESCENT: PARENTS (AND) SCHOOL PERSONNEL WORKING TOGETHER--LOOKING TOWARD THE FUTURE.
SN OFFICE OF SPECIAL EDUCATION AND REHABILITATIVE SERVICES (ED), WASHINGTON, DC. (EDD00011).
PR EDRS PRICE - MF01/PC03 PLUS POSTAGE.
NT 57P.

YR 82.
AB ISSUES INVOLVED IN THE EDUCATION OF ADOLESCENTS WITH LEARNING DISABILITIES (LD) INCLUDE THE NECESSITY FOR THE STUDENT TO SURMOUNT ORGANIZATIONAL PROBLEMS AT HOME AND AT SCHOOL, AND THE EFFECTS OF INADEQUATE SOCIAL SKILLS AND THE FEAR OF FAILURE. PARENTS OF LD STUDENTS SHOULD UNDERSTAND THEIR RIGHTS IN THE ASSESSMENT PROCESS, AND SHOULD BE ACQUAINTED WITH FEATURES OF APPROPRIATE ASSESSMENT (SUCH AS THE USE OF MORE THAN ONE TEST SCORE AND THE IMPORTANCE OF CONTINUAL ASSESSMENT). PROGRAM PLANNING REQUIRES COOPERATION BETWEEN PARENTS AND SCHOOLS. INTERVENTION SHOULD FOCUS ON PROMOTING SELF ASSURANCE AND INDEPENDENCE, DEVELOPING SOCIAL SKILLS, AND PREPARING FOR CAREER DECISIONS. EXAMPLES ARE GIVEN OF WAYS IN WHICH PARENTS CAN HELP AT HOME AND SUGGESTIONS ARE MADE ABOUT THE SUPPORT ROLES OF PARENTS, THE SCHOOL, AND THE COMMUNITY. (CL).

24
AN EJ262892.
AU EVERHART, ROBERT B.
TI THE NATURE OF "GOOFING OFF" AMONG JUNIOR HIGH SCHOOL ADOLESCENTS.
SO ADOLESCENCE; V17 N65 P177-88 SPR 1982. 82.
AV REPRINT: UMI.
YR 82.
AB FOCUSES ON "GOOFING OFF" AND THE MEANING OF THAT ACTIVITY TO STUDENTS INVOLVED. DESCRIBES GOOFING OFF AS AN ADAPTIVE BEHAVIOR WHICH OCCURS WITHIN A PARTICULAR ORGANIZATIONAL CONTEXT. DISCUSSES FACTORS THAT AFFECT THE PRESENCE OF THIS BEHAVIOR. ANALYZES WHAT GOOFING OFF SHOWS ABOUT EARLY ADOLESCENCE IN THE CONTEXT OF SCHOOLING. (RC).

25
AN EJ262890.
AU HAYES, RICHARD L.
TI A RE-VIEW OF ADOLESCENT IDENTITY FORMATION: IMPLICATIONS FOR EDUCATION.
SO ADOLESCENCE; V17 N65 P153-65 SPR 1982. 82.
AV REPRINT: UMI.
YR 82.
AB ARGUES FOR A VIEW OF ADOLESCENCE AS DERIVING FROM THE NATURE OF THE INTERACTION OF ADOLESCENT THOUGHT AND ACTION IN A SOCIAL SETTING. SUGGESTS THE NECESSITY FOR RETHINKING CURRENT DEFINITIONS OF ADULT AS WELL AS ADOLESCENT DEVELOPMENT AND CALLS FOR A CHANGE IN WAYS BOTH GROUPS ARE EDUCATED. (RC).

26
AN EJ262809.
AU BEDER, HAROLD W.; DARKENWALD, GORDON G.
TI DIFFERENCES BETWEEN TEACHING ADULTS AND PRE-ADULTS: SOME PROPOSITIONS AND FINDINGS.
SO ADULT EDUCATION; V32 N3 P142-55 SPR 1982. 82.
AV REPRINT: UMI.
YR 82.
AB DATA WERE COLLECTED FROM 173 PUBLIC SCHOOL AND COLLEGE TEACHERS WHO

TAUGHT BOTH ADULTS AND CHILDREN. WHEN TEACHING ADULTS, TEACHERS APPEAR TO EMPHASIZE LEARNER-CENTERED BEHAVIORS AND DEEMPHASIZE CONTROLLING BEHAVIORS. TEACHING DIFFERENCES WERE RELATED TO PERCEIVED DIFFERENCES BETWEEN ADULTS AND PRE-ADULTS ON LEARNING-RELATED CHARACTERISTICS. (AUTHOR/SK).

27
AN EJ260422.
AU PADILLA, MICHAEL.
TI EARLY ADOLESCENCE.
SO SCIENCE AND CHILDREN; V19 N5 P36-37 FEB 1982. FEB82.
AV REPRINT: UMI.
YR 82.
AB PHYSICAL, SOCIAL, AND EMOTIONAL CHANGES IN EARLY ADOLESCENTS AND THEIR EFFECTS ON SCIENCE TEACHING ARE BRIEFLY DISCUSSED. A VARIETY OF CLASSROOM ACTIVITIES, ALLOWING FOR IMPORTANCE OF PEER GROUP BY ARRANGING BOTH INDIVIDUAL AND GROUP ACTIVITIES, AND FOCUSING ON INDIVIDUAL GROWTH, DEVELOPMENT, AND CHANGE ARE SUGGESTED. (SK).

28
AN EJ260407.
AU SCHLOSS, PATRICK J.; MILLER, SIDNEY R.
TI PSYCHOLOGICAL AND BEHAVIORAL CHARACTERISTICS OF ADOLESCENT MENTALLY RETARDED: IMPLICATIONS FOR PROGRAMMING AND INSTRUCTION.
SO HIGH SCHOOL JOURNAL; V65 N4 P135-42 JAN 1982. JAN82.
AV REPRINT: UMI.
YR 82.
AB TRANSLATES FOR THE SECONDARY TEACHER CURRENT LEARNING THEORY RESEARCH INTO EDUCATIONAL PROGRAM IMPLICATIONS FOR THE MENTALLY RETARDED ADOLESCENT. DISCUSSES ADAPTIVE BEHAVIOR, EFFECTANCE MOTIVATION, LIMITED RANGE OF REINFORCING EVENTS, EXTERNAL LOCUS OF CONTROL, AND DEFICIENCIES IN SOCIAL DISCRIMINATION. (AUTHOR/DC).

29
AN EJ260186.
AU STERNBERG, ROBERT J.; DOWNING, CATHRYN J.
TI THE DEVELOPMENT OF HIGHER-ORDER REASONING IN ADOLESCENCE.
SO CHILD DEVELOPMENT; V53 N1 P209-21 FEB 1982. FEB82.
AV REPRINT: UMI.
YR 82.
AB INVESTIGATES THE HYPOTHESIS THAT STRATEGY DEVELOPMENT MIGHT OCCUR WITHIN OR BEYOND THE PERIOD OF FORMAL OPERATIONS, BUT THAT THIS DEVELOPMENT MIGHT BE DISCERNIBLE ONLY BEYOND THE SECOND ORDER OF ANALOGICAL RELATIONS. ADOLESCENT STRATEGY DEVELOPMENT IN THE SOLUTION OF THIRD-ORDER ANALOGIES RESEMBLED IN PATTERN THE PREADOLESCENT DEVELOPMENT FOUND IN THE SOLUTION OF SECOND-ORDER ANALOGIES. (AUTHOR/RH).